

AWS A5.17/A5.17M:2019
An American National Standard

Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding



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An American National Standard**

**Approved by the
American National Standards Institute
February 05, 2019**

Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding

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Prepared by the
American Welding Society (AWS) A5 Committee on Filler Metals and Allied Materials

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This specification provides requirements for the classification of solid and composite carbon steel electrodes and fluxes for submerged arc welding. Electrode classification is based on chemical composition of the electrode for solid electrodes, and chemical composition of the weld metal for composite electrodes. Flux classification is based on the mechanical properties of weld metal produced with the flux and an electrode classified herein. Additional requirements are included for sizes, marking, manufacturing, and packaging. The form and usability of the flux are also included. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of submerged arc fluxes and electrodes.

This specification makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.



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Foreword

This foreword is not part of this standard but is included for information purposes only.

This document is the second of the A5.17/A5.17M specifications which makes use of both U.S. Customary Units and the International System of Units (SI). The measurements are not exact equivalents; therefore, each system must be used independently of the other, without combining values in any way. In selecting rational metric units, AWS A1.1, *Metric Practice Guide for the Welding Industry*, is used where suitable. Tables and figures make use of both U.S. Customary and SI Units, which, with the application of the specified tolerances, provides for interchangeability of products in both the U.S. Customary and SI Units.

The current document is the sixth revision of the initial joint ASTM/AWS document issued in 1965. There are no additions or deletions of alloys, classifications, or tests in this revision. It has been revised to bring it up to date with the current practices and rules of the AWS A5 Committee on Filler Metals and Allied Materials. The document evolution took place as follows:

Document Evolution

AWS A5.17-65T ASTM A558-65T	<i>Tentative Specifications for Bare Mild Steel Electrodes and Fluxes for Submerged-Arc Welding</i>
AWS A5.17-69 ANSI W3.17-1973	<i>Specification for Bare Mild Steel Electrodes and Fluxes for Submerged Arc Welding</i>
ANSI/AWS A5.17-77	<i>Specification for Bare Carbon Mild Steel Electrodes and Fluxes for Submerged Arc Welding</i>
ANSI/AWS A5.17-80	<i>Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding</i>
ANSI/AWS A5.17-89	<i>Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding</i>
ANSI/AWS A5.17/A5.17M-97	<i>Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding</i>

Comments and suggestions for improvement of this standard are welcome. They should be sent to the Secretary, AWS A5 Committee on Filler Metals and Allied Materials, American Welding Society, 8669 NW 36 St # 130, Miami, FL 33166.

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Table of Contents

	Page No.
<i>Personnel</i>	v
<i>Foreword</i>	vii
<i>List of Tables</i>	xi
<i>List of Figures</i>	xi
1. Scope	1
2. Normative References	1
2.1 American Welding Society (AWS) Documents	1
2.2 American National Standards Institute (ANSI) Document	2
2.3 ASTM International (ASTM) Documents	2
2.4 International Organization for Standardization (ISO) Document	2
3. Classification	3
4. Acceptance	6
5. Certification	6
6. Rounding Procedure	6
7. Summary of Tests	6
8. Retest	7
9. Weld Test Assemblies	7
9.1 Requirements for Classification	7
9.2 Weld Test Assemblies	7
9.3 Weld Pad	8
9.4 Groove Weld for Mechanical Properties and Soundness	8
9.5 Diffusible Hydrogen	10
10. Chemical Analysis	11
11. Radiographic Test	12
12. Tension Test	14
13. Impact Test	14
14. Diffusible Hydrogen Test	15
15. Method of Manufacture	16
16. Electrode Requirements	16
16.1 Standard Sizes	16
16.2 Finish and Uniformity	16
16.3 Standard Package Forms	16
16.4 Winding Requirements	16
16.5 Electrode Identification	17
16.6 Packaging	17
16.7 Marking of Packaging	17

	Page No.
17. Flux Requirements	17
17.1 Form and Particle Size	17
17.2 Usability	17
17.3 Packaging	17
17.4 Marking of Packages	17
Annex A (Informative)—Guide to AWS Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding.....	19
Annex B (Informative)—Requesting an Official Interpretation on an AWS Standard	29
AWS Filler Metal Specifications Listed by Material and Welding Process	31
AWS List of Filler Metal Specifications and Related Documents	33

List of Tables

Table	Page No.
1	Chemical Composition Requirements for Solid Electrodes5
2	Chemical Composition Requirements for Composite Electrode Weld Metal5
3	Tests Required for Classification7
4	Base Metals for Test Assemblies 10
5	Welding Parameters for Groove Weld Test Assembly 11
6	A5.17 Tension Test Requirements 14
6M	A5.17M Tension Test Requirements 14
7	A5.17/A5.17M Impact Test Requirements 15
8	Diffusible Hydrogen Requirements 16
A.1	Comparison of Electrode Designations.....22

List of Figures

Figure	Page No.
1	A5.17 Classification System for U.S. Customary Units3
1M	A5.17M Classification System for the International System of Units (SI).....4
2	Weld Pad for Chemical Analysis of Weld Metal from Composite Electrodes8
3	Groove Weld Test Assembly9
4	Radiographic Standards for Rounded Indications 13